## **Atlantic Orient Corporation**



### www.aocwind.net



### **Atlantic Orient Corporation**

#### Who We Are

- Vermont Based Designer and Manufacturer of Small to Medium-Sized Wind Turbines
- Company has Experienced Management, Engineering and Market Knowledge.
   Management has been in the wind power business for over 25 years.

#### What We Manufacture

- AOC 15/50 50 kW 50 & 60 Hz wind turbine generator is Third Party Tested,
   Field Proven, and Commercially Available
- WindLite 10 kW DC wind turbine generator in development.
- Other small WTG's in development

### Services We Offer

- Engineering / System Design / Integration
- Project Support & Site Evaluation
- Installation
- Service



### **Atlantic Orient Corporation Products**

15/50 Wind Turbine

WindLite 10 kW







### AOC 15/50 50 kW WTG

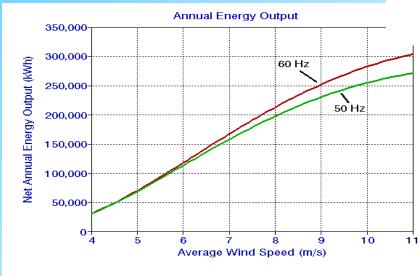


- Absolute Simplicity and Minimal Maintenance Requirements
- Designed for 30 Year Life in Extreme Environmental Conditions
- Downwind, Passive Yaw Configuration
- Integrated Drive Train Provides Efficient Load Path
- Single Piece Casting for Hub, Gearbox Housing, and Tower Top
- Redundant Failsafe Braking: Tip Brakes, Dynamic Brake, and Parking Brake
- Engineered for Use in High Penetration Wind / Diesel Hybrid Systems



### AOC 15/50 performance

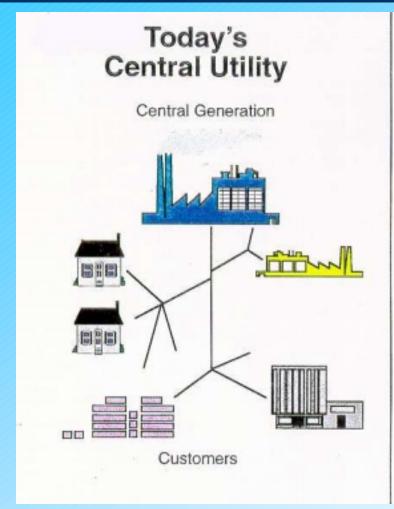


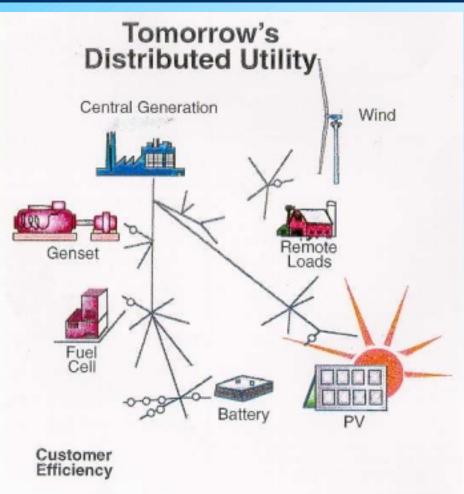




Atlantic Orient Corp - Robert Sherwin CEO

### Central vs Distributed Energy







### **AOC's Small Wind Turbine Market**

- Distributed Generation
- Retail power displacement Cassop UK
- Net Billing Maine, Mass and Vermont
- Wind /Diesel and rural power development
  - -offset expensive diesel fuel Arctic, Islands Wales Alaska
  - -small wind farms for rural grid expansion and support- KEA
- Remote Generation and Village Electrification
  - -Windlite remote homes, public and commercial facilities
  - -15/50 new power sources with wind diesel Morocco

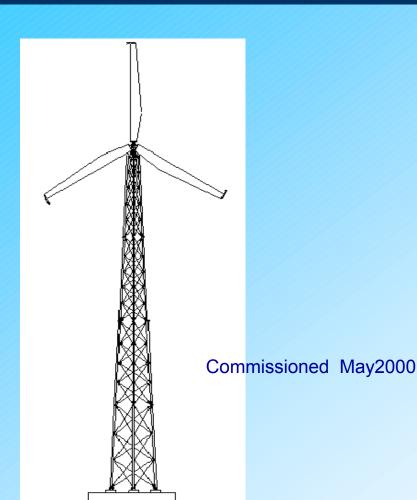
### Dynapower, Burlington VT



- one AOC 15/50 turbine
- utility grid connected- retail power off set
- manufacturing facility
- 50kW @ 11.3 m/s 60hz



# Burlington Electric Department, Burlington VT



- one AOC 15/50 turbine
- utility grid connected
- utility training
- SCADA interface with utility
- Educational resource
- 50kW @ 11.3 m/s 60hz



## Blueberry Factory, Orland ME



- one AOC 15/50 turbine
- utility grid connected- retail power off set
- manufacturing facility
- 50kW @ 11.3 m/s 60hz



# Other New England and New York Installations

- residential installation in New Hampshire
- utility grid connected- retail power off set

Commissioned October 97

- commercial installation in Northern Maine
- utility grid connected- retail power off set

Commissioned December 1999

- utility installation on Long Island
- utility grid connected green energy demonstration

Installation planned late 2001



# Wales, Alaska, U.S.A. High Penetration Wind/Diesel Application



**Description**: Two AOC 15/50 wind turbines were installed in 2000 as part of a small high penetration wind diesel hybrid system. The system is now successfully running with the diesels off line for long periods.



# Kotzebue, Alaska, U.S.A. Wind/Diesel Application

**Purpose**: Generate lower cost electricity for community of 3,500 residents, north of the Arctic Circle, while reducing environmental risk from transport, storage and burning of diesel fuel.

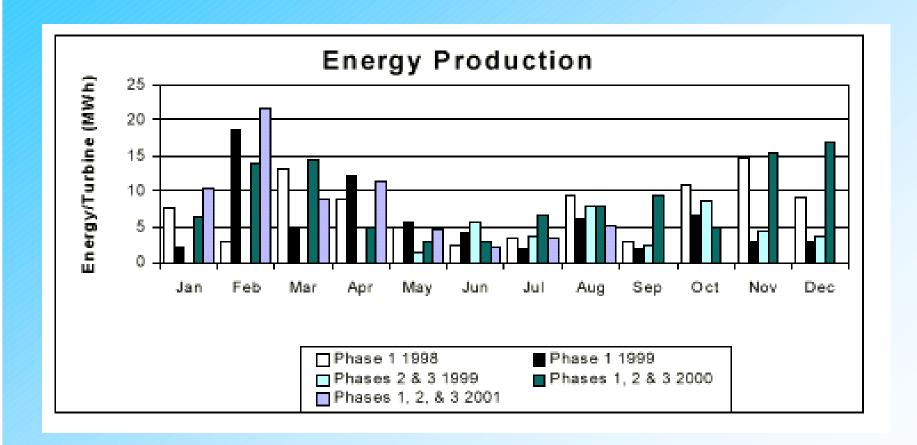
**Description**: Three AOC 15/50 wind turbines were installed in 1997 with seven additional turbines installed in the spring of 1999. Two more turbines will be installed in 2002. Each turbine is estimated to displace enough diesel fuel to power 17 to 29 homes, or about 6 percent of the current electrical demand.



**Results**: U.S. DOE-EPRI Wind Turbine Verification Program reported in the April 1999 TVP News Bulletin: "Over the past six months, the three initial turbines have average more than 98% availability. During the February reporting period, the project generated 56 MWh, which equates to an impressive 38% capacity factor assuming a sustained peak power rating of 66 KWh per turbine. Turbine output has been higher than projected by the power curve in the extremely cold temperatures and increased air density of Kotzebue winters."

Atlantic Orient Corporation
Wind Energy Systems for the World

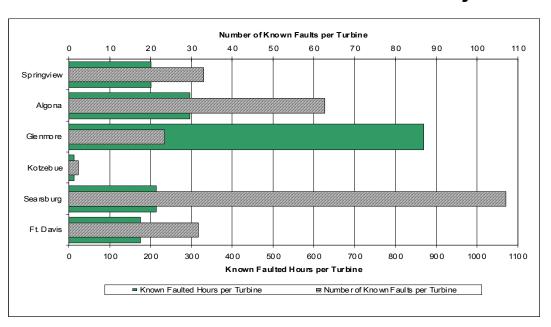
### **KEA Energy Production**





## **TVP Fault Analysis**

### **Number and Duration of Faults – TVP Projects**



18



### Market Retail Power Offset / Net Billing



Cassop Primary School, UK
Energy for School

Dynapower
Burlington, VT
Supply Power for Factory





### **KEA Wind Farm**



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